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THE HARVARD SCHOOL OF PUBLIC HEALTH

55 VAN DYKE STREET, BOSTON, MASS.

1926-27

PUBLISHED BY HARVARD UNIVERSITY

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BUILDING OF THE SCHOOL OF PUBLIC HEALTH

Buildings of the Harvard Medical School and of the Children's Hospital shown in the background

ANNOUNCEMENT

OF THE

HARVARD SCHOOL OF PUBLIC HEALTH

55 VAN DYKE STREET, BOSTON, MASS.

OF

HARVARD UNIVERSITY

FOR

1926-27

PUBLISHED BY HARVARD UNIVERSITY

1926

JULY

Su	Mo	Tu	W	Th	Fr	Sa
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(4)	5	6	7	8	9	10
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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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1927

JANUARY

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JULY

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	*(24)*	25	26
27	28	29	30	..	..	..
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DECEMBER

..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
(25)	26	27	28	29	30	31
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CALENDAR

1926

Sept. 27, Monday.	ACADEMIC YEAR BEGINS. Registration of students. Payment of the first instalment of the tuition fee is required on this date.
Oct. 12, Tuesday.	Columbus Day: a holiday.
Nov. 25, Thursday.	Thanksgiving Day: a holiday.
Nov. 30, Tuesday.	Payment of the second instalment of the tuition fee is required on or before this date.
Dec. 15, Wednesday.	Last day for receiving theses for February degrees.

RECESS FROM DEC. 23, 1926, TO JAN. 2, 1927, INCLUSIVE

1927

Jan. 1, Saturday.	New Year's Day: a holiday.
Jan. 29, Saturday.	Payment of the third instalment of the tuition fee is required on or before this date.
Jan. 31, Monday.	SECOND HALF-YEAR BEGINS.
Feb. 22, Tuesday.	Washington's Birthday: a holiday.
April 15, Friday.	Last day for receiving theses for June degrees.

RECESS FROM APRIL 17 TO APRIL 23, INCLUSIVE

April 30, Saturday.	Payment of the fourth instalment of the tuition fee is required on or before this date.
May 30, Monday.	Memorial Day: a holiday.
June 23, Thursday.	COMMENCEMENT.

SUMMER VACATION, FROM COMMENCEMENT TO SEPTEMBER 25, INCLUSIVE

In order to insure equal periods of time for the various monthly courses, the following division of the academic year has been arbitrarily made:

Mon. Sept. 27–Sat. Oct. 23	OCTOBER
Mon. Oct. 25–Sat. Nov. 20	NOVEMBER
Mon. Nov. 22–Thurs. Dec. 23	DECEMBER [1]
Mon. Jan. 3–Sat. Jan. 29	JANUARY
Mon. Jan. 31–Sat. Feb. 26	FEBRUARY
Mon. Feb. 28–Sat. Mar. 26	MARCH
Mon. Mar. 28–Sat. April 30	APRIL [2]
Mon. May 2–Sat. May 28	MAY

[1] Christmas vacation from Dec. 23, 1926, to Jan. 2, 1927, inclusive.

[2] Easter vacation from April 17 to April 23, 1927, inclusive.

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5 University Hall, Cambridge

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1926*

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1927

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JAMES JACKSON, A.B. — 209 Washington St., Boston

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1928

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BENJAMIN LORING YOUNG, A.B., LL.B. — Auburndale

* The term expires, in each case, on Commencement Day of the year indicated.

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300 Montgomery St., San Francisco, Cal.

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† Arranged, with the exception of the President, Dean, and Assistant Dean on the basis of collegiate seniority.
* Leave of absence 1926–1927.

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Dean: David L. Edsall, A.B., M.D., S.D.
Office, School of Public Health, 55 Van Dyke St., Boston.

Assistant Dean: Cecil K. Drinker, S.B., M.D.
Office, School of Public Health, 55 Van Dyke Street, Boston.

Secretary: Marian Dale.
Office, School of Public Health, 55 Van Dyke Street, Boston.

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Edwin B. Wilson, A.B., Ph.D., *Professor of Vital Statistics.*

Hans Zinsser, A.M., M.D., *Professor of Bacteriology.*

William L. Moss, B. S., M.D., *Assistant Professor of Bacteriology.*

Ernest E. Tyzzer, Ph.B., A.M., M.D., *Professor of Comparative Pathology.*

OTHER COMMITTEES

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Higher Degrees: Ernest E. Tyzzer, *Chairman,* Hans Zinsser, Edwin B. Wilson, William L. Moss (*ex officio*).

Fellowships: Edwin B. Wilson, Hans Zinsser.

THE HARVARD SCHOOL OF PUBLIC HEALTH

HISTORICAL STATEMENT

The Harvard School of Public Health first gave instruction to students in the academic year 1922–23. For many years activity in public health had been rapidly increasing in Harvard University. The influence of the University upon public health, through the pioneering and long-continued efforts of Dr. Henry P. Walcott, senior member of the Harvard Corporation, was important and far-reaching. Courses in the various departments had been gradually developed to meet the need for men trained to conserve public health. The field of public health is so broad that it is not strange that this School did not find its origin in any one department. The records show certain important steps in what has been essentially a gradual development. In 1909 a department of Preventive Medicine and Hygiene was established in the Medical School. The degree of Doctor of Public Health was first conferred in 1911. In this same year a department of Sanitary Engineering was inaugurated in the Engineering School. In 1913 a department of Tropical Medicine was formed. In 1918 a Division of Industrial Hygiene with clinical and laboratory facilities was organized in the Harvard Medical School.

Besides these activities which were directly concerned with the training of men for public health work, research was being carried on in the regular departments of the Harvard Medical School in Bacteriology, Pathology, Parasitology, Physiology, Bio-Chemistry, and others, which had perhaps a less direct but very real bearing on the development of the science of public health. On analysis it appeared that there were many activities under the various faculties of Harvard University, besides those of Medicine and Engineering, that had some bearing on public health. Under the Faculty of Arts and Sciences there were many courses, such as those in Physics, Chemistry, Zoölogy, Social Ethics, etc., which formed in certain cases important parts of the training of individuals for work in public health. In addition, there had been established in 1914, under the Faculty of Arts and Sciences, a department of Hygiene, which undertook the supervision of the health of the students in its broadest aspect. This department had collected much data of considerable value in public health.

In 1913 the "Harvard-Technology" School of Public Health was organized. It was under the joint management of Harvard University, and the Massachusetts Institute of Technology. This School continued to operate until the fall of 1922, when, with the inauguration of the new Harvard School of Public Health, the "Harvard-Technology" School, as such, ceased to exist. However, the Massachusetts Institute of Technology continues to coöperate with the Harvard School of Public Health and also offers courses in public health through its department of Biology and Public Health, leading to the several degrees: bachelor, master, and doctor of science, doctor of philosophy, and to the certificate of public health.

As a result of these activities, the University found itself in possession of a substantial nucleus upon which to erect a new School of Public Health of larger scope, and in 1921 received from the Rockefeller Foundation a generous endowment for this purpose, known as the Henry P. Walcott Fund of Harvard University. This gift made it possible: first, to correlate and to enlarge the various departments already existing, such as Preventive Medicine and Hygiene, Bacteriology, Sanitary Engineering, Tropical Medicine, Parasitology, and Industrial Hygiene; second, to create a department of Vital Statistics and to develop new special fields of instruction, such as Public Health Administration, Child Hygiene, Mental Hygiene, Communicable Diseases, and Ventilation and Illumination; and lastly, to purchase a building standing on land adjacent to that occupied by the Medical School in which to house the administration and the various groups concerned with the work of public health.

GENERAL STATEMENT

Purpose

It is the object of the School of Public Health to provide the scientific groundwork of expert knowledge which underlies efficient health administration together with some actual personal acquaintance with modern public health practice of the best types and thus to prepare students for careers in public health. The School of Public Health offers courses and opportunities to fit students for administrative, teaching, field, or laboratory positions. To this end, lectures, laboratory work, hospital exercises, field surveys, and other forms of instruction are offered by members of the Faculty and by special instructors actively engaged in public health work. Coöperation is also maintained with federal, state, and local health departments, and with hospitals and other agencies. Favorable opportunity is given to those who desire to contribute to knowledge through laboratory research or field investigation.

Facilities

Boston affords unusually good opportunities to study the operation and administration of state and municipal departments of health. Immediately adjacent to the School of Public Health is the Medical School of Harvard University with its well-equipped laboratories and other facilities. In connection with the Port of Boston, the Federal Government maintains maritime quarantine, immigration, medical and other health services. There are several large hospitals available for study and research in the communicable diseases. Abundant material for study of problems of mental hygiene may be found at the Psychopathic Hospital and at the Massachusetts School for Feeble-Minded at Waverley. In Boston are found the health problems of a metropolitan center, and within easy reach, those of large and small towns, as well as of country districts. Boston is an industrial center and its varied industries serve the purpose of industrial hygiene and industrial medicine. All the usual philanthropic health activities, such as baby hygiene stations, the Red Cross, anti-tuberculosis organizations, district and public health nursing services, and many other similar agencies are active in and around Boston. The School of Public Health is able to take advantage of these and other special opportunities.

Programs of Study

Public Health Education is founded upon a broad knowledge of three fields, Public Health Administration including Epidemiology, Vital Statistics, and Sanitary Engineering. All other subjects constitute specialties.

Students entering the school are divisible into two classes: (1) those coming for some highly specialized type of training and unconcerned with the matter of the certificate or a degree; and (2) those who wish to obtain a certificate or a degree. On presentation of satisfactory evidence of suitable preliminary training the first group will find ample opportunity for work in their particular projects. In dealing with the second group it is the aim of the school to permit as great freedom in individual selection of programs as is consistent with a proper foundation in the three fundamental fields of public health.

Students wishing to become candidates for either the Master or Doctor of Public Health degrees may consider the courses Public Health Administration A, Epidemiology A, Vital Statistics A and Sanitary Engineering A, as representing the minimum requirements in these subjects. Candidates for the two degrees mentioned are in no sense re-

quired to take these courses, but in the final oral examination for the Master's degree and in the preliminary examination for the Doctor's degree, students will be expected to display an amount of information equivalent to these minimum requirements.

Considering the usual programs of study as built upon these three subjects and recognizing the necessity for specialization which is inherent in preparation for careers in the various branches of public health, the main specialized fields in public health are considered to be the following:

1. Communicable Diseases.
    - *a*. Applied Bacteriology and Immunology.
    - *b*. Diagnosis and management of Communicable Diseases.
    - *c*. Medical Zoölogy and Tropical Medicine.

2. Medical Zoölogy and Tropical Medicine.
    - *a*. Applied Bacteriology and Immunology.
    - *b*. Medical Zoölogy and Tropical Medicine.
        - *1*. Protozoölogy.
        - *2*. Helminthology.
        - *3*. Medical Entomology.
        - *4*. Tropical Medicine.

3. Industrial Hygiene.
    - *a*. Physiology.
    - *b*. Nutrition.
    - *c*. Ventilation and Illumination.
    - *d*. Industrial Hygiene and Toxicology.

4. Community Hygiene.
    - *a*. Child Hygiene.
    - *b*. Mental Hygiene.
    - *c*. Hospital Administration.

Students deciding upon programs of study should realize that this division is merely a convenient method of concentrating their studies and in no sense indicates a rule of procedure in the school. Experience indicates that most men will wish to select one or another of these fields in addition to the three fundamental branches which have been mentioned. If this is done, the final oral examination will include questions on the field chosen.

In some instances election of courses without regard to the three fundamental subjects in public health and without regard to the divi-

sions indicated by the list of special fields will be desirable. In such cases the final examination will cover the subjects elected.

Sample programs of study meeting the requirements for the Master's degree and for candidacy for the Doctorate in Public Health are as follows:

1. Chief interest — Control of Infectious Diseases.

   Courses:
   1. Public Health Administration and Epidemiology A.
   2. Vital Statistics A.
   3. Sanitary Engineering A.
   4. Applied Bacteriology and Immunology A.
      - *a.* Lectures in Immunology.
      - *b.* Communicable Diseases A.
   5. Medical Zoölogy and Tropical Medicine.

   Additional courses desirable:
   1. Child Hygiene A.

2. Chief interest — Industrial Hygiene.

   Courses:
   1. Public Health Administration and Epidemiology A.
   2. Vital Statistics A.
   3. Sanitary Engineering A.
   4. Physiology A.
      - *a.* Nutrition A.
      - *b.* Ventilation and Illumination A.
   5. Industrial Medicine A.
   6. Industrial Toxicology A.

   Additional courses desirable:
   1. Research in Ventilation and Illumination.

3. Chief interest — Medical Zoölogy and Tropical Medicine.

   Courses:
   1. Public Health Administration and Epidemiology A.
   2. Vital Statistics A.
   3. Sanitary Engineering A.
   4. Medical Zoölogy and Tropical Medicine A.
   5. Applied Bacteriology and Immunology A.

   Additional Courses desirable:
   1. Communicable Diseases A.
   2. Advanced work in Tropical and Exotic Diseases.

4. Chief interest — Community Hygiene.

Courses: 1. Public Health Administration and Epidemiology A.
2. Vital Statistics A.
3. Sanitary Engineering A.
4. Hospital Administration A.
5. Mental Hygiene A.
6. Child Hygiene A.

Additional courses desirable:
1. Ventilation and Illumination A.
2. Social Ethics.
3. Housing.

Opportunities for Part-Time Work

Courses are planned in such a way that students unable to spend a full academic year at the School may come for one or more months and secure courses in some special field. Condensed courses lasting one full month are offered in Child Hygiene, Mental Hygiene, Physiology, Ventilation and Illumination, Industrial Medicine, and Hospital Administration. Courses covering a half-day for two months are offered in Vital Statistics, Sanitary Engineering, Nutrition, and Industrial Toxicology. It is believed that such arrangements will enable men already in the active field of Public Health to devote a limited amount of time to the study of one or two particular subjects. A glance at the tabular view (page 52) will give an idea of the possibilities of this plan for certain elementary courses. Students are thus able not only to take the intensive courses formally offered during the period that they are at the School, but to fit into their programs other training in special fields by individual arrangements with local laboratories, health agencies, and hospitals.

ADMISSION REQUIREMENTS

Candidates for the degrees must satisfy the Administrative Board of their academic fitness (1) by a medical degree, or its equivalent, from an approved medical school, or (2) by evidence of adequate training in English and other modern languages, physics, inorganic, organic and biochemistry, biology, anatomy, histology, physiology, pathology, and bacteriology. The training indicated under (2) represents the minimum requirements for entrance to the Harvard Medical School, plus certain of the fundamental medical sciences of the first two years of the Medical School.

The mere completion of courses is not ordinarily satisfactory evidence of the fitness of a prospectivestudent. The Administrative Board may

require further evidence of present ability to utilize the training received, and ability to profit by the courses administered by the School. The medical degree or its equivalent is a prerequisite for the degree of Doctor of Public Health, the Master of Public Health, but not for the Doctor of Philosophy in Hygiene.

Those who do not meet the academic requirements for admission as candidates for degrees may be admitted as students to certain courses and programs of study at the discretion of the Administrative Board.

Opportunities are offered to research students who may desire to investigate special health problems or to make surveys without reference to a degree.

Admission of Women: Women whose previous training and experience are satisfactory may register in this School as special students. As in the past, women may also register for the degree of Doctor of Philosophy in Hygiene through Radcliffe College, taking their work in this School. The University does not confer the degrees of Doctor of Public Health, or Master of Public Health, on women.

All inquiries and communications should be addressed to the Secretary of the Harvard School of Public Health, 55 Van Dyke Street, Boston, Mass., who will forward upon request catalogues, admission blanks, fellowship applications, and any other information desired. It will expedite matters in regard to admission of prospective students if they will supply the following information to the Secretary at the earliest possible date: (1) Date and place of birth; (2) Academic Education; (3) Medical Education; (4) Languages read and spoken; (5) Experience or professional career; (6) Proposed length of stay; (7) Special training desired.

CERTIFICATE IN PUBLIC HEALTH

Prerequisites: The student must give evidence of having had satisfactory training in modern languages, inorganic, organic and biochemistry, biology, physiology, anatomy, histology, pathology, and bacteriology. As a rule these requirements will be met by students possessing a bachelor's degree plus the first two years in an approved medical school.

The Certificate in Public Health will be granted on satisfactory completion of an approved program followed during an academic year in the School of Public Health. The certificate is given for satisfactory performance in the individual courses making up the program and does not require the final general examination essential for the degree of Master of Public Health.

DEGREES

Master of Public Health

Students entering for this degree must present satisfactory evidence of having received the M.D. degree, or its equivalent, from an approved medical school.

Candidacy for the degree of Master of Public Health: Before admission to candidacy for the degree of Master of Public Health, the student will be required to present a program of advanced study covering one year's work, which must be approved by the Committee on Higher Degrees.

Final Examination: The conditions governing this examination have been indicated in the section on programs for study.

Residence: For the degree of Master of Public Health, one academic year must be spent in residence at this University.

Doctor of Public Health

Students contemplating entrance for this degree must present satisfactory evidence of having received the M.D. degree, or its equivalent, from an approved medical school.

Candidacy for the degree of Doctor of Public Health: To establish candidacy the student is required to pass an oral examination of the same type as that required to obtain the degree of Master of Public Health. This examination may be taken without reference to the length of residence as a student. It is intended to provide the assurance that all men receiving the doctorate in Public Health are grounded in the three fundamental subjects and in the field most closely allied to their special interests. Programs of study or statements of the qualifications of the student for examination must be presented to the Committee on Higher Degrees when the student enters the school.

Thesis: For the doctorate in Public Health the student must present a program of independent investigation to the Chairman of the Committee on Higher Degrees. The result of this investigation will form the basis of the thesis which must be presented as one of the final requirements for graduation. The thesis must be received by the Chairman of the Committee on or before the fifteenth day of December for degrees conferred in February, and on or before the fifteenth day of April for degrees conferred in June. Each thesis must be accompanied by a summary not exceeding 1200 words in length which shall indicate clearly its purposes, methods and results.

Final Examination: On approval of the thesis the student will be required to expound and defend the subject matter of the thesis to the Faculty of the School of Public Health.

Residence: For the degree of Doctor of Public Health, at least one academic year must be spent in residence in this University.

Doctor of Philosophy (in Hygiene)

The degree of Doctor of Philosophy is granted by the University on recommendation of the Division of Medical Sciences of the Faculty of Arts and Sciences in the following special fields:

Anatomy, including comparative anatomy.
Embryology, including microscopic anatomy.
Physiology or comparative physiology.
Biological chemistry.
Pathology or comparative pathology.
Bacteriology.
Pharmacology.
Hygiene.

Properly qualified students in public health have the opportunity to obtain the Doctorate in Philosophy in the field most closely allied to their special interests. This degree is administered by the Faculty of Arts and Sciences and in accordance with their regulations. Candidates for the degree of Doctor of Philosophy must fulfill certain preliminary requirements, must devote to approved advanced studies not less than two years — at least one of which must be spent in residence at this University — and must pass general examinations and present an account of original work in an accepted thesis, before being granted the degree.

Doctor of Medical Sciences

The degree of Doctor of Medical Sciences is administered by the Faculty of Medicine in accordance with their regulations. Further information concerning this degree may be had upon application.

The degrees of Doctor of Philosophy and Doctor of Medical Sciences are designed for those who wish to become productive scholars.

FEES AND EXPENSES

The fees are: For instruction (including laboratory charges except breakage, damage, and loss of apparatus), $300 for each year. The tuition will be charged on terms bills issued and payable as follows: one-fourth on the term bill issued and payable September 27th, 1926, one-fourth on the term bill issued November 12th and payable November 30th, one-fourth on the term bill issued January 12th and payable

January 29th, and one-fourth on the term bill issued April 12th and payable April 30th. Students desiring to take single courses may do so at the rate of $50 for one full month's work, payable in advance.

Bills for miscellaneous charges will be rendered at the time the indebtedness is incurred.

All indebtedness to the University must be paid by all candidates for degrees at least one day before Commencement.

Students who are candidates for degrees in the middle of the academic year must pay all dues to the University at least one day before the day upon which the degrees are to be voted.

A student who leaves during the year is charged to the end of the tuition period in which he leaves, provided before that time he gives the Dean notice in writing of his withdrawal; otherwise he is charged to the end of the academic year or to the end of the tuition period in which such notice is given.

When a student's connection with the University is severed, all charges against him must be paid at once.

Any student whose indebtedness to the University remains unpaid on the date fixed for payment is deprived of the privileges of the University until he is reinstated. Reinstatement is obtained only by consent of the Dean of the Department in which the student is enrolled, after payment of all indebtedness and a reinstatement fee of $10. A student may rent a microscope from the School upon application to the Administration Office, but the School offers no guarantee that it will keep on hand a sufficient number of such instruments to furnish one for each student. A deposit of $1 with the Dean will entitle the student to the use of a locker in the School buildings.

STILLMAN INFIRMARY FEE

Not later than October 1 in each academic year, any student may pay to the Bursar the sum of $7 for the maintenance of the Stillman Infirmary; and, on the order of a physician, every student who has taken advantage of this opportunity will be given, in case of sickness, in return for the fee, a bed in a ward, board, and ordinary nursing for a period not exceeding two weeks in any one academic year.

The School of Public Health provides a physician, Dr. George P. Denny, who will give physical examination or medical treatment to students without charge, during his office hours, or at other times by appointment.

BOND REQUIRED OF STUDENTS

Every student is required to file with the Bursar on his entrance to the School a bond of $200 executed by two sufficient bondsmen, one of whom must be a citizen of the United States or by a surety company duly qualified to do business in Massachusetts, or he may deposit with the Bursar two hundred dollars in United States bonds, or fifty dollars as security and pay in advance all sums for which he becomes liable to the University. Money deposited as security is returnable after the issue of the fifth term-bill, one week before Commencement. Blank forms of bonds may be obtained at the Dean's Office or from the Bursar. *Students will be held responsible for the payment of fees until they have notified the Dean, in writing, of their intention to withdraw from the School and have subsequently received their bond from the Bursar.*

LOCATION AND BUILDINGS

The School of Public Health is located at 55 Van Dyke Street. The building, formerly occupied by the Infants' Hospital, is large and adequate to meet the needs of the growing School of Public Health. It stands on land adjacent to that occupied by the Medical School and in close proximity to the Peter Bent Brigham Hospital, the Children's Hospital, the Collis P. Huntington Hospital, and the new Lying-In Hospital. The Boston Psychopathic Hospital is also within a few blocks. The students of the School of Public Health have the privilege of the full use of the Harvard Medical School buildings.

LIBRARIES

The Library of the School of Public Health is combined with the central library of the Harvard Medical School. It is housed in the Administration Building of the Harvard Medical School adjacent to the School of Public Health, and is open from 9 A.M. until 10 P.M. on week days, and from 9 A.M. until 5 P.M. on Saturdays. There are at present 43,310 volumes and 96,478 pamphlets in this library, and 376 current periodicals are kept on file.

Students also have the privilege of the use of the College Library in Cambridge, and of the various departmental libraries belonging to the University, in all of which there are 2,416,500 volumes and pamphlets.

Beside the University libraries, students in this School may use the Boston Public Library on Copley Square, and the Boston Medical

Library at No. 8 the Fenway, which contains 133,348 volumes and 91,456 pamphlets, and 650 current periodicals. This very valuable library is open to those who desire to consult medical literature on week days from 9.30 A.M. until 10 P.M., and in July, August and September from 9.30 A.M. until 5 P.M.

FELLOWSHIPS

The School offers a limited number of fellowships of $1200 each. These fellowships are open to students of high scholarship and exceptional ability. Applicants whose experience and training have fitted them to pursue an original piece of research work along lines of Public Health will be given preference. No fellowship will be granted to a student spending less than one academic year at the School.

Applications for fellowships should be filed with the Secretary of the School of Public Health.

ANNOUNCEMENT OF COURSES

BACTERIOLOGY

Hans Zinsser, A.B., A.M., M.D., *Professor of Bacteriology and Immunology.*

Benjamin White, Ph.B., Ph.D., *Assistant Professor of Bacteriology* and *Director of the Division of Biologic Laboratories, Department of Public Health of Massachusetts.*

W. L. Moss, B.S., M.D., *Assistant Professor of Bacteriology and Immunology.*

J. Howard Mueller, Ph.D., *Assistant Professor of Bacteriology and Immunology.*

Francis B. Grinnell, A.B., M.D., *Associate in Bacteriology and Immunology.*

Robert N. Nye, M.D., *Instructor in Bacteriology.*

William A. Hinton, S.B., M.D., *Instructor in Bacteriology* and *Assistant Director of Wassermann Laboratory.*

Elliott S. A. Robinson, M.D., Ph.D., *Instructor in Bacteriology* and *Assistant Director of the Biologic Laboratories, State Department of Public Health.*

The Department of Bacteriology and Immunology of the Harvard School of Public Health, in addition to a course in bacteriology adapted to the needs of medical students, offers a course of lectures and demonstrations in immunity and specific therapy. A course is given once a year for a limited number of advanced students, with particular reference to the needs of public health officers. The work is adapted in each case to the needs of the student applying, by special arrangements with the instructing staff.

Opportunity for diagnostic serological work is offered in the Department in connection with the Wassermann Laboratory of the State of Massachusetts, and provision is made for individual work upon problems of serum production, standardization, etc., under Dr. Benjamin White of the Massachusetts Antitoxin and Vaccine Laboratory.

Advanced work, and opportunities for investigation are available, admission to this type of work depending upon the fitness of the applicant.

Bacteriology A 1

Three afternoons a week (Monday, Wednesday, and Friday) for four months (October, November, December, and January).

This course is the regular Medical School course, and, provided there is adequate accommodation, is open to students in the School of Public Health who are insufficiently prepared in bacteriology and immunology.

Lectures in Immunology

Two afternoons a week (Tuesday and Thursday) for three months (November, December, and January).

This course consists of lectures on the principles of infection and resistance with serological demonstrations.

Applied Bacteriology and Immunology A

Mornings in February and all day in March.

This course is given jointly by the Department of Bacteriology and Immunology and the Massachusetts Antitoxin and Vaccine Laboratory. The more important communicable diseases will be studied in the Department of Bacteriology from the bacteriological point of view, with laboratory work in the biology of the microörganisms, their relation to disease and immunologic features, together with the correlation of the clinical bacteriological problems. After this, in each case, the method of the production of specific biologic products of diagnostic, prophylactic and therapeutic value will be studied at the Massachusetts Antitoxin and Vaccine Laboratory. Professor Rosenau, of the Department of Preventive Medicine and Hygiene, will collaborate at suitable periods in the course in discussing the correlation of the subject matter of the work with epidemiology and prevention.

Wassermann Laboratory A

This course is planned to give a practical working knowledge of serologic and bacteriologic examinations used in the diagnosis of syphilis and gonorrhea. The major portion of time will be devoted to Wassermann technique and allied reactions. Abundant material is available for the study of the methods taught.

Arrangements as to hours will be made to suit the needs of individual students.

Research in Bacteriology C

Special advanced courses will be offered in Immunology and the Technique of Serum Study, and will be open to a limited number of students.

Opportunity will also be given for properly qualified students to pursue research work along varied lines.

APPLIED IMMUNOLOGY — BIOLOGIC PRODUCTS

Benjamin White, Ph.B., Ph.D., *Director of the Division of Biologic Laboratories, Massachusetts Department of Public Health.*

Elliott S. A. Robinson, A.B., M.D., Ph.D., *Assistant Director of the Division of Biologic Laboratories, Massachusetts Department of Public Health.*

In addition to the course in Applied Bacteriology and Immunology, given jointly by the Massachusetts Antitoxin and Vaccine Laboratory and the Department of Bacteriology (for details see Bacteriology), opportunities will be afforded to properly qualified students, upon permission from Dr. White, for special research work in this field.

MEDICAL ZOÖLOGY AND TROPICAL MEDICINE A

Instruction in this course will be furnished by the combined staffs of the Departments of Comparative Pathology and Tropical Medicine.

The course is divided into four sections of one month each as follows:

Protozoölogy

Ernest E. Tyzzer, Ph.B., A.M., M.D., *Professor of Comparative Pathology.*

Marshal Fabyan, A.B., M.D., *Assistant Professor of Comparative Pathology.*

Lemuel R. Cleveland, S.B., Sc.D., *Assistant Professor in Protozoölogy.*

Three afternoons a week (Monday, Wednesday and Friday) for one month (October).

Following a brief preliminary survey of the field of Medical Zoölogy, such Protozoa as are considered of medical importance will be taken up with special reference to their identification and life cycles. Together with the theoretical knowledge of the subject acquired through

reading or from lectures, the student will be expected to learn certain useful methods for obtaining and preparing material for study and also to become proficient in the identification of the more important parasitic protozoa. Material from human cases, cultures and experimentally infected animals will be utilized for the study of these microörganisms. Seminars will be held at which the student will review certain important contributions to the subject.

Helminthology

Donald L. Augustine, S.B., Sc.D., *Assistant Professor of Helminthology.*

Marshal Fabyan, A.B., M.D., *Assistant Professor of Comparative Pathology.*

Jack H. Sandground, S.B., S.M., Sc.D., *Instructor in Tropical Helminthology.*

Three afternoons a week (Monday, Wednesday and Friday) for one month (November).

It is designed to give the student a general knowledge of the biology of the helminths, and to acquaint him with those species parasitic in man and the diseases caused by them. Emphasis will be placed upon the symptomatology, methods of diagnosis and treatment; and the life-cycles in relation to the transmission, prophylaxis and control of these parasites. Conferences will be held at which reports are to be given by members of the class on original observations and current literature pertaining to the subject.

Medical Entomology

Joseph C. Bequaert, Ph.D., *Assistant Professor of Entomology.*

Charles T. Brues, S.M., *Assistant Professor of Economic Entomology.*

Three afternoons a week (Monday, Wednesday and Friday), for one month (December).

This will consist of instruction in the structure, classification, and development of Crustacea, Arachnoidea, Myriopoda, and Insecta known to be concerned or likely to be concerned in the health of man and domestic animals. A study will be made of the various ways in which these organisms are active either as parasites, as carriers of diseases, or as the cause of local injuries or physiological disturbances. Laboratory work will provide practical training in identification, dissection, methods of studying life-histories and habits, and experimental transmission of

diseases. Stress will be laid upon furnishing the student with the most useful monographs and reference books. Students may go on further to become acquainted with the extensive special literature so as to be able to carry on independent research work in tropical and foreign countries.

Infectious Diseases

Richard P. Strong, Ph.B., M.D., S.D., *Professor of Tropical Medicine.*

Andrew Watson Sellards, A.M., M.D., *Assistant Professor of Tropical Medicine.*

George C. Shattuck, M.D., A.M., *Assistant Professor of Tropical Medicine.*

Max Theiler, M.R.C.S., L.R.C.P., D.T.M. and H., *Instructor in Tropical Medicine.*

Three afternoons a week (Monday, Wednesday and Friday), for one month (January).

The course consists of lectures, laboratory work, and clinical instruction.

The most important infectious and other preventable diseases of tropical and foreign countries will be dealt with from the following points of view:

1. The etiology, principles, and modern methods of diagnosis.
2. The methods of transmission and mode of spread.
3. The hygienic problems involved in their control and prevention.
4. The administrative and practical measures to be employed in the control of these diseases under endemic and epidemic conditions.
5. The value of a knowledge of the methods of diagnosis, methods of transmission, prevention, and treatment of the tropical diseases of men and animals in connection with the study, prevention, and treatment of the human infectious diseases in general.

Medical Zoölogy

During the past year research was carried on in the following subjects: intestinal amoeba, intestinal flagellates, bionomics of the hookworm.

PREVENTIVE MEDICINE AND EPIDEMIOLOGY

Milton J. Rosenau, M.D., A.M., *Charles Wilder Professor of Preventive Medicine and Hygiene.*

Lloyd D. Felton, A.B., M.D., *Assistant Professor of Preventive Medicine and Hygiene.*

Benjamin White, Ph.B., Ph.D., *Assistant Professor of Preventive Medicine and Hygiene*, and *Director of the Antitoxin and Vaccine Laboratory, State Department of Public Health.*

W. Lloyd Aycock, M.D., *Associate in Preventive Medicine and Hygiene.*

Joseph W. Schereschewsky, A.B., M.D., *Associate in Preventive Medicine and Hygiene.*

Elliott S. A. Robinson, M.D., Ph.D., *Instructor in Preventive Medicine and Hygiene*, and *Assistant Director of the Antitoxin and Vaccine Laboratory, State Department of Public Health.*

Epidemiology A

Two afternoons a week (Tuesday and Thursday) for three months (January, February, and March).

Field and practical work — all day in May.

The course consists of lectures, demonstrations, and practical field work. The lectures are designed to give the principles, historic development, and methods of epidemiology with their application to public health administration of the communicable diseases. A number of well-studied epidemics are described and discussed with special reference to their origin, mode of spread and control. The course also includes a consideration of the following subjects: the epidemiology of air-borne, water-borne, milk-borne, and insect-borne infections; the epidemiology of selected representative diseases; disinfection and disinfectants; seasonal prevalence and periodicity; geographic distribution; the laws of epidemics. Each student is required to study and report briefly upon an epidemic. Each student is also required to make a special study of some topic in epidemiology, which is made the subject of a report and discussion at one of the conferences. The afternoons of April are allotted to surveys or special work in epidemiology and public health administration. The month of May is devoted to instruction in practical epidemiology; this part of the field work is done in coöperation with the Massachusetts State Department of Public Health. Each student is assigned to a member of the Department who acts as a tutor, supervises his reading, guides his field work and surveys and helps generally with his problems. The system permits the development of individual interests. Students taking the course are also invited to attend a Journal Club which meets regularly during the academic season.

Epidemiology B

Advanced work. By arrangement with Professor Rosenau.

This consists in special investigations of a particular disease or problem from both the field and the laboratory standpoints.

Research in Preventive Medicine and Epidemiology C

During the past year research has been carried on in the following subjects: Epidemiology of pneumonia; the virulence of the pneumococcus; isolation of the protective antibody from antipneumococcus serum; immunologic properties of antipneumococcus solutions; studies on soluble specific precipitating substances for antipneumococcus sera; the epidemiology of poliomyelitis; and the epidemiology of cancer. Properly qualified students desiring to do advanced work will be welcomed into any of the lines of research which have been reviewed.

COMMUNICABLE DISEASES

Edwin H. Place, M.D., *Clinical Professor of Pediatrics.*

Communicable Diseases A

Three afternoons a week (Monday, Wednesday, and Friday) for one month (February).

This course will be blocked out in such a manner that individual students may take single sections of the work.

Practical experience will be given at the South Department, Boston City Hospital, in the diagnosis, means of isolation, and care of scarlet fever, measles, and diphtheria, supplemented by special exercises in various clinics on pneumonia, typhoid fever, influenza, infantile paralysis, tuberculosis, and venereal diseases.

Research in Communicable Diseases B and C

The South Department of the Boston City Hospital is equipped with 300 beds which are used only by patients with communicable diseases. The two diseases found most frequently in this department are scarlet fever and diphtheria, but all of the other common communicable diseases, such as whooping cough, mumps, measles, chicken pox, tonsillitis, croup, streptococcus sore throats, etc., may be found.

Arrangements may be made for students to observe the work in the department daily, and to spend from one to six months studying and

working with one particular disease. Properly qualified men may also be taken on as regular members of the staff on special interneships for a period of 6 or 8 months in order to get a general familiarity with the communicable diseases.

TROPICAL MEDICINE

Richard P. Strong, Ph.B., M.D., S.D., *Professor of Tropical Medicine.*

Andrew Watson Sellards, A.M., M.D., *Assistant Professor of Tropical Medicine.*

George C. Shattuck, M.D., A.M., *Assistant Professor of Tropical Medicine.*

Joseph Bequaert, Ph.D., *Assistant Professor of Entomology.*

Lemuel R. Cleveland, B.S., D.Sc., *Assistant Professor of Protozoölogy.*

Max Theiler, M.R.C.S., L.R.C.P., D.T.M. and H., *Instructor in Tropical Medicine.*

Jack H. Sandground, S.B., S.M., S.D., *Instructor in Tropical Helminthology.*

Alexander Hamilton Rice, M.D., A.M., *Lecturer on Diseases of South America.*

Albert A. Hornor, A.B., M.D., *Assistant in Tropical Medicine.*

William E. Deeks, M.D., A.M., *Lecturer on Tropical Medicine.*

Carlos Chagas, A.M., *Lecturer on Tropical Medicine.*

Afranio do Amaral, B.Sc., B.Litt., M.D., Dr. P.H., *Lecturer on Ophiology.*

Medical Zoölogy and Tropical Medicine A

Three afternoons a week (Monday, Wednesday and Friday), for four months, October, November, December and January.

Instruction in this course will be furnished by the combined staffs of the Departments of Comparative Pathology and Tropical Medicine. For details see page 26.

Advanced Work in Tropical and Foreign Medicine

For students entering the School with the intention of specializing in public health in tropical countries, a series of courses lasting eight months is provided. The program followed must include advanced courses in exotic and tropical diseases in:

1. Practical bacteriology and pathology.
2. Practical protozoölogy and helminthology.
3. Practical entomology.
4. Epidemiology (including field work).
5. Clinical, at infectious diseases hospital.

The courses in bacteriology, protozoölogy, helminthology, and entomology are fundamental in connection with the prevention and control of tropical or exotic diseases. Courses relating to tropical climatology, botany, venomous animals and the biological effects of sunlight in tropical countries will also be of advantage and of particular interest to the health officer who desires a more cosmopolitan experience, and are provided for those students desiring them. The need for thoroughly trained men in the field of exotic and tropical medicine is especially urgent.

The program for such advanced students will naturally vary in individual cases and must be approved by the Professor of Tropical Medicine before submission to the Administrative Board.

Special Clinical Work: There are opportunities from time to time for one or more students to attend clinical work for longer or shorter periods at the Boston City Hospital, where there is a service for tropical and foreign diseases under Dr. George C. Shattuck of the Department. There are also opportunities for special clinical work in several hospitals or in the different laboratories situated in the tropics with which Harvard University is connected.

Research in Tropical and Foreign Medicine

The research work in progress includes studies in relation to the Hamilton Rice Expedition in connection with the Department of Tropical Medicine to the Amazon Valley in 1924–25; studies upon certain "free-living" and saprophytic microörganisms and their relation to disease; upon experimental chemotherapy of some of the protozoal and trematode infections; upon the etiology of rat-bite fever and the treatment of general paralysis with *S. morsus muris;* the study of the life-history of mosquito larvae especially with reference to the influence of various chemical substances present in the water; a study of the hymenopterous parasites of ticks and their possible use in the control and eradication of ticks which transmit disease; studies upon yaws with particular reference to immunity; the cholera bacteriophage; upon certain pathogenic Leptospira and their serological relationship; the life-history of Strongyloides intestinalis; and the oxygen tension upon protozoa.

PUBLIC HEALTH ADMINISTRATION

GEORGE H. BIGELOW, A.B., M.D., Dr. P.H., *Lecturer on Public Health Administration* and *Commissioner, Department of Public Health of Massachusetts.*

CLARENCE L. SCAMMAN, B.S., M.D., C.P.H., *Associate in Public Health Administration* and *Deputy Commissioner, Department of Public Health of Massachusetts.*

CHARLES V. CHAPIN, A.B., M.D., Sc.D., *Lecturer on Public Health Administration* and *Superintendent of Health, City of Providence.*

HERBERT L. LOMBARD, A.B., M.D., M.P.H., *Assistant in Public Health Administration* and *Epidemiologist, Department of Public Health of Massachusetts.*

Special lectures in this course during the year 1925–26 were given by the following:

Dr. FRANCIS X. MAHONEY, *Commissioner, Department of Health, City of Boston.*

Dr. MATTHIAS NICOLL, Jr., *Commissioner, State Department of Health of New York.*

Dr. L. L. LUMSDEN, *Surgeon, United States Public Health Service.*

Dr. WILSON G. SMILLIE, *International Health Board, Rockefeller Foundation.*

Mr. JAMES A. TOBEY, *Institute for Government Research, Washington,* and others.

Public Health Administration A

Two afternoons a week (Tuesday and Thursday), for three months (October, 3 to 5, November, 4 to 5.30, December, 3 to 5).
Field work — all day in May.

This course consists of lectures, demonstrations and practical field work, given mainly by health officers actively engaged in the work of health administration. The federal, state, municipal and rural situations will be covered; the historical development, budgets and budget making, economic problems, hospital administration and public health education will be discussed; special lectures upon sanitary law will be part of this course. Active coöperation has been effected with the Health Department of the City of Boston, the Massachusetts State Department of Public Health and the activities of the U. S. Public Health Service in and around Boston; also with the City Department of Health of Providence, R. I., Manchester, N. H., Newton, Mass., and other health

departments. During the field work the students will meet some thirty persons actually engaged in various phases of health and medical work and will see their organizations actually functioning. These will include large and small city health departments, rural boards of health, school medical inspection, communicable disease control, milk and other food handling and inspection, water and sewage plants, industrial medicine, health units, tubercular, venereal and other clinics, health examinations, contagious disease hospitals, etc. This work will be given during the month of May on account of favorable weather conditions for field work, and because at this time the students will have had during the school course the scientific and theoretical ground work on which public health administration rests.

Research in Public Health Administration B

Special opportunities to investigate certain problems in federal, state, or city health administration are afforded to students who are specially qualified.

PHYSIOLOGY

*Cecil K. Drinker, S.B., M.D., *Professor of Physiology.*

Lawrence T. Fairhall, S.M., A.M., Ph.D., *Instructor in Physiology.*

Louis A. Shaw, A.B., *Instructor in Physiology.*

Leonell C. Strong, B.S., Ph.D., *Research Fellow in Physiology.*

Physiology A

Daily all day for one month (February) with the exception of Tuesday, Thursday, Saturday afternoons.

The courses in physiology as related to the problems of hygiene, and in ventilation and illumination, will be given daily for one month. The close alliance of these subjects renders it desirable that students register for the entire period. In exceptional cases, however, opportunity may be given to take physiology, or ventilation and illumination separately.

The following subjects will be discussed during the hours devoted to physiology.

Respiration: The physiology of respiration will be reviewed and will lead to a discussion of the effects of high and low atmospheric pressure, carbon monoxide, carbon dioxide, and the commoner non-toxic dusts. The necessary physiological features of rescue apparatus will be demon-

* On sabbatical leave of absence, 1926–1927.

strated. Such matters as deep breathing, shallow breathing, resisted breathing, vital capacity, cough and pulmonary edema will be considered in relation to their hygienic significance.

Circulation: The physiology of blood formation and blood destruction will be followed by a discussion of lymph formation and lymph drainage. The general circulation will be reviewed with particular reference to the physiology of cardiovascular breakdown and the methods now available for testing circulatory efficiency.

Fatigue and Repair: The physiological organization of the neuromuscular apparatus will be reviewed and will be followed by a discussion of such subjects as fatigue and repair in physiological processes, practice, exercise, and industrial fatigue.

Hearing and Vision: A brief discussion of the physiology of hearing and vision with special reference to the physiology of tests for acuity of both these senses will be given.

No regular laboratory exercises accompany this course which consists of lectures, demonstrations, conferences, and assignments of reading.

Research in Physiology B

The research activities of the laboratory are concerned with problems of circulatory and muscular efficiency, the evaluation of fibrotic processes due to different dusts and to problems of poisoning by several of the heavy metals.

Properly qualified students will be given opportunities to work in the laboratory provided they can spend at least six months of undivided time.

Nutrition A

Lawrence T. Fairhall, S.M., A.M., Ph.D., *Instructor in Physiology.*

Three afternoons a week (Monday, Wednesday, and Friday) for two months (December and January).

This is an advanced course which will include lectures, conferences, and assigned reading upon the chemistry and physiology of nutrition, particularly from the view point of large groups of people. Such phases as quality and quantity requirements, vitamins and digestibility in their especial relations to public health will be adequately treated. The conventional presentation of the subject will, however, be subordinated to its more vital and practical aspects. Modern problems in the economics of food production, distribution and utilization, famine conditions and the relation of food and nutrition to certain phases of world politics will

receive especial treatment. The course will include visits to various plants handling and producing articles of food.

Properly qualified students will be given an opportunity for laboratory work.

VENTILATION AND ILLUMINATION

PHILIP DRINKER, S.B., Ch.E., *Assistant Professor of Ventilation and Illumination.*

CONSTANTIN P. YAGLOU, A.B., M.E., M.M.E., *Instructor in Ventilation and Illumination.*

R. M. THOMSON, *Assistant in Ventilation and Illumination.*

Ventilation and Illumination A

Daily, all day, during February except Tuesday, Thursday and Saturday afternoons.

The subjects offered will be the following:

1. The measurement of air flow with use of the Pitot tube, Venturi meter, orifice meter, wet and dry gas meters, continuous recording devices, manometers, and katathermometers.

2. The general principles and physics of psychrometry with the determinations of humidity by measuring and recording devices.

3. Air conditioning from the standpoints of design, use, critical examination of equipment, and results obtained.

4. Physiological and practical aspects of air conditioning by direct experimentation with the effects of temperature, humidity, and air movement and the application of these factors to general comfort and ventilation efficiency. Body temperature, metabolism, and comfort at work and at rest under varying atmospheric conditions. Fatigue and efficiency of workers in hot industries as affected by the thermal conditions of the atmosphere.

5. The use of gas masks, respirators, hose masks and oxygen breathing apparatus. The determination of their efficiency, and resistance to breathing.

6. The determination and microscopy of dusts, fumes, and smokes in air by devices such as filters, water scrubbers, Tyndallmeter, ultramicroscope, and electric precipitator. The significance of particle size, specific surface, and number; the effect of atmospheric conditions on the settlement and aggregation of dusts, fumes, and smokes.

7. Studies of glare, diffusion, speed of vision, visual acuity and their importance in various occupations. Industrial and domestic illumina-

tion, determination of optimum illumination intensities as related to eye fatigue.

Research in Ventilation and Illumination B

The investigations now in progress consist in methods of studying dusts, fumes, and smokes in air, their toxic effects, their inhalation retention, and exhalation, and photometric methods for their study while suspended in dry or humid, still or moving air. In the general field of air conditioning, studies in the effect of various temperatures, humidities, and air movement on circulation, metabolism, and health are also in progress.

A limited number of duly qualified students will be given an opportunity to do research work in any of these fields, or in the selected topics covered in the general course.

INDUSTRIAL MEDICINE

David L. Edsall, A.B., M.D., S.D., *Dean of the Harvard Medical School and the Harvard School of Public Health.*

*Alice Hamilton, M.D., A.M., *Assistant Professor of Industrial Medicine.*

Edgar L. Collis, M.D., M.R.C.S., *Lecturer on Industrial Medicine.*

Derric C. Parmenter, A.B., M.D., *Instructor in Industrial Medicine.*

W. Irving Clark, Jr., A.B., M.D., *Instructor in the Practice of Industrial Medicine.*

Robert S. Quinby, M.D., *Instructor in the Practice of Industrial Medicine.*

Louis R. Daniels, M.D., *Instructor in the Practice of Industrial Medicine.*

Frank E. Schubmehl, M.D., *Assistant in Industrial Medicine.*

Harold W. Stevens, A.B., M.D., *Assistant in Industrial Medicine.*

Noel G. Munroe, A.B., M.D., *Assistant in Industrial Medicine.*

Halstead G. Murray, M.D., *Assistant in Industrial Medicine.*

Erwin H. Schell, S.B., *Instructor in Industrial Operation.*

Industrial Medicine A

Derric C. Parmenter, AB., M.D., *Instructor in Industrial Medicine.* With the coöperation and assistance of special lecturers, instructors, and assistants.

* On sabbatical leave of absence, 1926–1927.

Daily, all day for one month (April) with the exception of Tuesday, Thursday, and Saturday afternoons.

This course is arranged to meet the requirements of students who desire a survey of industrial medicine and methods of industrial practice. It is adapted to the needs of students unable to spend a longer period in Industrial Medicine at the School, and will include demonstrations and lectures on industrial toxicology, industrial and mercantile medical practice, ventilation, illumination, factory sanitation, safety engineering, and compensation. Special effort will be made to correlate the lectures and practical work in this course by means of visits to industrial mercantile establishments and clinics.

Students electing this course will do well to avoid conflicting courses during this period.

Students interested primarily in industrial hygiene will find opportunities for further instruction of both a practical and theoretical nature in Industrial Medicine B.

Industrial Toxicology A

*Alice Hamilton, M.D., A.M., *Assistant Professor of Industrial Medicine.*

Edgar L. Collis, M.D., M.R.C.S., *Lecturer on Industrial Medicine.*

Tuesday and Thursday afternoons from 2 to 3 for two months (February and March).

An advanced course which will include lectures, conferences, and assigned reading upon the industrial poisons together with visits to factories and definite studies of field conditions.

In the year 1926–27, the field of Industrial Toxicology will be covered by lectures given by Professor Edgar L. Collis of the University of Wales, England.

Industrial Medicine B

Opportunities for research and special study will be open to a limited number of properly qualified students. Special attention will be paid to the solving of practical problems under actual working conditions in industrial establishments.

VITAL STATISTICS

Edwin B. Wilson, A.B., Ph.D., *Professor of Vital Statistics.*

Carl R. Doering, A.B., M.D., *Instructor in Vital Statistics.*

Vital Statistics A

Five mornings a week for two months (December and January).

The elementary course in Vital Statistics will consist of lectures and laboratory work designed to familiarize the student with the facts already well established in this field, with the methods of graphical representation, with the basic theory of probability including errors of sampling, with association (Yule) and correlation, with arithmetic and geometric trends, and with elements of frequency functions necessary alike for the proper analysis of statistical data, and for the adequate layout of any contemplated statistical survey.

Text: G. C. Whipple, *Vital Statistics.*
M. J. Rosenau, *Preventive Medicine*, Chap. XXX, by C. R. Doering.

References: Arne Fisher, *Mathematical Theory of Probabilities.*
R. Pearl, *Biometry and Vital Statistics.*

A knowledge of the elements of the infinitesimal calculus, though not a prerequisite for the elementary course, is desirable, and is indispensable for all really critical or advanced work in statistical theory.

Biomathematics A

Two afternoons a week (Tuesday, Thursday) for two months (October and November).

Lectures on certain aspects of mathematics in their relation to the biological sciences. Arithmetic and algebra, symbolism, permanence of form, exponents, permutations and combinations, binomial theorem, constants and variables, uniform rates, uniformly varying rates (accelerations), integrated rates, areas, limits of quotients and sums, infinitesimals, functions, differentials, derivatives, integrals, law of organic growth (Malthus), logarithms, exponentials, inverse functions, mathematical tables, interpolation, summation, law of unimolecular reaction, law of autocatalytic or buffer action, environmental inhibition of growth, treatment of experimental data, empirical equations and the determination of natural laws, probability, curve-fitting, the statistical or kinetic view of equilibrium in nature.

Vital Statistics B

Students who have a satisfactory elementary knowledge of statistics and calculus will be directed in their reading of more advanced operations of Vital Statistics, including the theory of frequency curves.

References: ARNE FISHER, *Mathematical Theory of Probabilities.*
D. C. JONES, *Course in Statistics.*
G. U. YULE, *Statistics.*
T. KELLY, *Statistical Method.*

Research in Vital Statistics C

Opportunities for special research work in Vital Statistics are open to students whether specializing in Vital Statistics or primarily in some other field of work, who desire to make a statistical investigation of their own connected with public health, or who may desire to coöperate in the general program of statistical research of the department.

Investigations are in progress or planned: with respect to hospital statistics of particular diseases using the large amount of material available in the hospitals associated with the School; with respect to the incidence of diseases with special reference to particular industries in coöperation with Dr. Parmenter and his associates in industrial hygiene or in coöperation with industries which may desire such investigations as a rational basis of the health programs for their employees; and with respect to the inter-relations of Vital Statistics and economic phenomena.

Research in Biomathematics B

Opportunities are offered to students who desire to pursue the quantitative and theoretical sides of various biological problems of a non-statistical nature or of a nature statistical in another sense than generally implied in the technical term Vital Statistics.

The Statistical Laboratory

The laboratory for instruction and research in Vital Statistics is housed on the second floor of the building of the School of Public Health on Van Dyke Street, and is equipped with various graphical and mechanical aids including sorting, tabulating and calculating machinery.

SANITARY ENGINEERING

GORDON M. FAIR, S.B., *Assistant Professor of Sanitary Engineering.*
MELVILLE C. WHIPPLE, *Assistant Professor of Sanitary Chemistry.*

The Principles of Sanitary Engineering A

Five mornings a week for two months (October and November) at Pierce Hall, Cambridge.

Mr. Fair.

A course of lectures and laboratory work arranged especially for students in the School of Public Health. The lectures will cover the following topics: — (*a*) Municipal Sanitation; (*b*) Water Supply and Water Purification; (*c*) Plumbing; (*d*) Sewerage and Sewage Treatment; (*e*) Disposal and Treatment of Wastes; (*f*) Building Sanitation; (*g*) Rural Sanitation.

In the laboratory the students will have opportunity to become familiar with the apparatus and instruments used in connection with studies of water purification and sewage treatment; they will be taught how to interpret water analyses and how to read engineering plans. In the field they will be taught how to make sketches and reports of engineering works. Arrangements will be made for students to visit water purification works, sewage treatment works and other works of sanitation in the vicinity of Boston, accompanied by an instructor.

Water and Sewage Analysis B

Five mornings a week for one month (February) at Pierce Hall, Cambridge.

Mr. Whipple and Mr. Fair.

A short practical course of lectures and laboratory work for those students who desire to supplement the course in Sanitary Engineering by a further study of water, sewage, and waste analysis. Special attention will be given to the use of analyses in the control of processes of water purification, sewage treatment works, and to the interpretation of analytical results. The topics covered will be Color, Turbidity and Odor of Water; Microscopic Examinations; Bacterial Counts and Tests for Bact. Coli; Dissolved Oxygen and Carbonic Acid; Hardness; Chlorides; the Nitrogen Cycle, etc.

Research in Sanitary Engineering C

There is opportunity for properly qualified students to pursue advanced work in subjects relating to the field of sanitary engineering. During the past year departmental research was carried on in the following subjects: stream pollution; sledge digestion; analysis of filtering materials; chlorination of sewage; nature of turbidity in water; current practice in disposal of municipal refuse in American cities.

HOSPITAL ADMINISTRATION

JOSEPH B. HOWLAND, M.D., *Lecturer on Hospital Administration.*
LESLIE H. WRIGHT, M.D., *Instructor in Hospital Administration.*

Hospital Administration A

Daily for one month (February) with the exception of Tuesday, Thursday and Saturday afternoons.

Instruction will be carried out with the coöperation of experts in administrative work in the hospitals associated with the Harvard Medical School. The course, limited to ten graduates in medicine, is intended to familiarize the student of Public Health with the principles of construction, organization, and administration of hospitals and allied institutions. Lectures will be supplemented by visits to different types of hospitals in and around Boston, and with at least a week of practical work as observers in the departments of the general hospitals of Boston. The work of the students will be reviewed each week at a Round Table exercise.

MENTAL HYGIENE

C. MACFIE CAMPBELL, M.A., B.Sc., M.D., *Professor of Psychiatry.*

With the coöperation and assistance of special lecturers, instructors, and assistants.

Mental Hygiene A

Daily, all day for one month (March) except Tuesday, Thursday, and Saturday afternoons.

This course, under the direction of Professor Campbell, offers the student opportunity for becoming familiar with the general field of mental hygiene and with its relations to other aspects of public health.

Mental Hygiene covers not only the traditionally recognized conditions of mental disorders ("Insanity") and defects ("Feeble-mindedness"): it deals also with manifold forms of apparent physical incapacity (including the "psychoneuroses"), with many social problems (prostitution, alcoholism, vagrancy), with maladjustments in home, in school, in industry.

The course will include a review of the fundamental principles of abnormal psychology, of the main types of mental abnormality, of the prevention, management and treatment of the personal and social factors involved in these disorders, and of the organization by the community of the necessary facilities for dealing with these problems.

The course will consist of lectures, clinical demonstrations, visits to hospitals, courts and other organizations, with supervised reading and opportunities for intensive clinical study along special lines (neurosyphilis, school hygiene, delinquency).

Elementary Mental Hygiene

Mondays 4 to 5, for ten weeks, beginning the middle of March.

This is a preliminary course on Medical Psychology given to the first-year medical students, consisting of lectures by Professor Campbell.

Research in Mental Hygiene B

Students holding the degree of Doctor of Medicine who satisfy the professor of their qualifications to do advanced work in Mental Hygiene may spend from one to six months under the guidance of Professor Campbell, working at the Boston Psychopathic Hospital. Here there is exceptional clinical material available and the student will have an opportunity at the bedside, in the various laboratories and in the out-patient department to study the problems related to mental instability, mental defect and mental disorders, both in adults and in children; the student can become familiar with the psychiatric aspect of such topics as prostitution, alcoholism, delinquency and many other social and public health problems. Those interested in a special topic of research will find the necessary clinical material available, and it will be possible for the student to make use of material in other institutions than the Boston Psychopathic Hospital.

CHILD HYGIENE

Richard M. Smith, A.B., M.D., *Assistant Professor of Child Hygiene.*
Merrill E. Champion, A.B., M.D., C.P.H., *Instructor in Child Hygiene.*
Wilfred L. McKenzie, M.B., *Research Fellow in Child Hygiene.*
With the coöperation of special lecturers.

Child Hygiene A

Daily, all day for one month (April) except Tuesday, Thursday, and Saturday afternoons.

Instruction will consist of lectures and conferences, and in observation of work in the field done under public and private direction. The State Department of Public Health and the Boston City Health Department offer facilities for the study at first hand of well organized Divisions of Child Hygiene. Prenatal clinics, post-natal baby clinics, child welfare

clinics, and work among school children will be demonstrated in actual operation. Illegitimacy will be presented through the work of the Florence Crittenton Home. Work for handicapped children will be discussed in connection with visits to the State School at Waverley, the State Hospital School at Canton, and the Judge Baker Foundation. Lectures on other special subjects of child hygiene will be given and visits made to associations in and near the city.

During the year 1925–26 special lectures and instruction were given by the following:

W. Lloyd Aycock, M.D.
Miss Mabel C. Bragg.
William P. Cooke, D.M.D.
Robert D. Curtis, M.D.
Robert L. DeNormandie, M.D.
Miss Abigail A. Eliot.
John E. Fish, M.D.
Joel E. Goldthwait, M.D.
Ransom A. Greene, M.D.
Alice Hamilton, M.D.
William Healy, M.D.
George S. Hill, M.D.
Percy R. Howe, D.M.D.
Mr. C. C. Jones.
Foster S. Kellogg, M.D.
Maynard Ladd, M.D.
Lyman G. Richards, M.D.
Mr. Robert W. Rivers.
Alfred P. Rogers, D.M.D.
C. Morton Smith, M.D.
Fritz B. Talbot, M.D.
Douglas A. Thom, M.D.
Miss Hazel Wedgwood.
Benjamin White, Ph.D.
Paul White, M.D.
Charles F. Wilinsky, M.D.
Miss Mabel R. Wilson.

Child Hygiene B

For students who have completed Child Hygiene A it will be possible by special arrangement with the head of the department to devote additional time to child hygiene, and to follow the various phases of the work for a longer period of time and at closer range than during the one month's course. Particular attention may be given to School Hygiene with inspection of buildings and detailed observation of medical inspection and physical education. Students may be assigned to hospital and child welfare clinics where they will be given an opportunity to take responsibility and share in the conduct of the work. Arrangements may be made for special study in pediatrics in connection with the Graduate School of Medicine.

Child Hygiene C

Research

There will be an opportunity for qualified students to investigate any phase of child hygiene. The results of such special studies may be published by the student if approved by the head of the department.

COURSES IN OTHER DEPARTMENTS OF THE UNIVERSITY

Students in the School of Public Health may take courses in other departments of the University subject to the following conditions: (1) Students must be properly qualified; (2) the consent of the professor in charge of the course must be obtained in each case; (3) the approval of the Administrative Board of the School of Public Health must be procured before one of these courses may be included as a part of a program.

Medical School

The Medical School is very closely affiliated with the School of Public Health, and the courses offered are open to students in this School. Of special interest to students in public health is the very unusual group of courses offered by the Medical School on Tuesday and Thursday afternoons, covering a wide range of subjects. A special bulletin is issued describing these courses. The research facilities of some departments of the Harvard Medical School present valuable opportunities for students in public health.

Courses for Graduates

Graduate courses in the Medical School, most of which last one month, are offered, from October to June, to graduates of Class A medical schools. Another group of short courses is given from June 1st to September 30th. These courses are open also to properly qualified undergraduate students and women. Courses in Surgery and Roentgenology and in Pediatrics have been found especially valuable for public health students.

Dental School

The Dental School is affiliated with the School of Public Health and is situated nearby so that students in this School who are interested in any aspect of dental work may take advantage of the courses offered in that School.

Engineering School

A number of courses are offered in the Engineering School which are closely related to public health. There are also facilities in the Engineering School for students wishing to do advanced research work along public health lines from the engineering standpoint.

Graduate School of Education

Public health students who are planning to teach public health or who wish to make a study of the educational side of public health may take courses in the Graduate School of Education, which offers such courses as The Principles of Educational Psychology and Mental Hygiene, School Hygiene, The Clinical Testing of Children, Problems in Mental and Physical Development, etc.

Graduate School of Business Administration

Students specializing in Industrial Hygiene or Public Health Administration may take special courses in the Graduate School of Business Administration, such as Industrial Management, Business Statistics, etc.

Faculty of Arts and Sciences

Some courses offered by the Faculty of Arts and Sciences, more especially in the Graduate School, have been found useful for students in public health, such as advanced work in Psychology, Chemistry, Zoölogy, Housing, Climatology, etc.

Bussey Institution — Graduate School of Applied Biology

The Bussey Institution offers opportunities for graduate instruction and research in those principles and problems which underlie the practical applications of zoölogy and botany to human welfare.

COURSES IN MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The School of Public Health maintains close coöperation with the Massachusetts Institute of Technology. A group of courses given at the Massachusetts Institute of Technology not listed in this catalogue is open to the students in the School of Public Health, and may, with the approval of the Administrative Board, be included in a general program and will be counted toward a degree.

Catalogues of the various schools listed above will be sent upon application to the Secretary of the Harvard School of Public Health, 55 Van Dyke Street, Boston 17, Mass.

OPPORTUNITIES FOR CLINICAL WORK BY SPECIAL ARRANGEMENT

The Harvard School of Public Health can make arrangements for students desiring special clinical work in the various local hospitals. Clinical courses lasting one month in Industrial Surgery and in Roentgenology have been arranged at the Massachusetts General Hospital and the Boston City Hospital. Arrangements have also been made for clinical work in Pediatrics at the Boston Dispensary and the Children's Hospital, also in coöperation with the official and unofficial health agencies in health centers, hygiene stations, etc.

OPPORTUNITIES FOR LABORATORY RESEARCH BY SPECIAL ARRANGEMENT

The Harvard School of Public Health can make arrangements for students desiring special laboratory work in the various city, state and private laboratories.

OPPORTUNITIES FOR FIELD WORK BY SPECIAL ARRANGEMENT

The Harvard School of Public Health can secure opportunities for students desiring special field work not offered in this School by individual arrangements with the State and City Boards of Health, or with the many health agencies that are active in and near Boston.

STUDENTS

Abadjieff, Boris, B.S. (*Gymnasium of Rsoutchauk*) 1904, M.D. (*University of Munich*) 1910, Sofia, Bulgaria
Bacteriology.

Balkansky, Ivan, B.S. (*Gymnasium of Varna*) 1906, M.D. (*Imperial University of Moscow*) 1914, Varna, Bulgaria
General Course.

Basaca, Mariano, A.B. (*Ateneo de Manila*) 1913, M.D. (*St. Thomas University*) 1918, Manila, P. I.
Bacteriology.

Bermudez, Salvador, M.D. (*National School of Medicine*) 1921, Mexico City, Mex.
Serology.

Campos, Franklin Augusto de Moura, M.D. (*São Paulo Medical School*), 1919, São Paulo, Brazil
Physiology.

Condy, Robert, M.B., B.Ch., B.A.O. (*Belfast Queens Univ.*) 1915, D.P.H. (*Dublin Univ.*) 1919, Belfast, Ire.
General Course.

Demaria, Alfred, A.B. (*Liceo de Valparaiso*) 1913, M.D. (*Escuela de Medicina*) 1921, Santiago, Chile
General Course.

Dzen, Moo Yi, M.D. (*Tokyo Imperial Univ.*) 1917, Peking, China
Serology.

Gomez, Francisco, A.B. (*College of Liberal Arts, Univ. of the Philippines*) 1917, M.D. (*Coll. of Medicine and Surgery, Univ. of the Philippines*) 1920, Manila, P. I.
General Course.

Gonzaga, Antonio Gavião, M.D. (*Rio Medical School*) 1917, Dr. P.H. (*ibid.*) 1917, Rio de Janeiro, Brazil
Tropical Medicine.

Guerrero, José,
Vital Statistics. San José, Costa Rica

Guncheff, Simeon, M.D. (*Univ. of Leipzig*) 1923,
Child Hygiene. Sofia, Bulgaria

Harbison, James Austin, M.B., B.Ch., B.A.O. (*Queens Univ.*) 1916, D.P.H. (*ibid.*) 1920, M.D. (*ibid.*) 1923, Cookstown,
Public Health Administration. Ire.

Harden, Robert DuRant, M.D. (*Atlanta Coll. of Physicians and Surgeons*) 1911, Atlanta, Ga.
General Course.

Johnson, Warren, M.D. (*Harvard Univ.*) 1924, Boston
General Course.

Jones, Durward Roscoe, B.S. (*Univ. of Chicago*) 1917, M.D. (*Rush Medical Coll.*) 1921, Rapid City, S. D.
General Course.

Jones, John Lewis, B.S. (*Utah Agricultural Coll.*) 1915, M.D. (*Harvard Univ.*) 1925, Monroe, Utah
Child Hygiene.

Jovanović, Milan, M.D. (*Univ. of Zagreb*) 1923
Sanitary Engineering. Belgrade, Jugoslavia

Karacsony, Geza Sylvester, A.B. (*Coll. of Kovno*) 1910, M.D. (*Univ. of Budapest*) 1920, Debrecsen, Hungary
Communicable Diseases.

Laurin, Zotique, A.B. (*Coll. of St. Thérèse*) 1917, M.D. (*Univ. of Montreal*) 1922, Quebec, Canada
Bacteriology.

Lovrekovich, Stephen, M.D. (*Univ. of Budapest*), Budapest, Hungary
Serology.

Morse, Fred Winslow, B.S. (*Dartmouth Coll.*) 1918, M.D. (*Harvard Univ.*) 1924, Amherst
Bacteriology.

Mott, Irene, A.B. (*Vassar Coll.*) 1922, Montclair, N. J.
Child Hygiene.

McMurry, Edith Nott, Madison, Wis.
Vital Statistics.

Nassir, Ahmed Zeki, M.D. (*Univ. of Constantinople*) 1910, Constantinople, Turkey
General Course.

Nauss, Ralph Welty, M.D. (*Northwestern Univ. Medical School*) 1905, Dr. P.H. (*Johns Hopkins Univ.*) 1921, Fairfield, Conn.
Industrial Hygiene.

Nobechi, Keizo, M.D. (*Tokyo Imperial Univ.*) 1919, Ph.D. (*ibid.*) 1925, Tokyo, Japan
Tropical Medicine.

Nowakowski, Brunon Anton, M.D. (*Univ. of Krakow*) 1922, Warsaw, Poland
Physiology.

Richardson, Gardner Aspinwall, A.B. (*Yale Coll.*) 1905, *Child Hygiene.* Woodstock, Conn.

Ristović, Desanka, M.D. (*Univ. of Prague*) 1919, *Child Hygiene,* Zagreb, Jugoslavia

Saito, Kiyoshi, M.D. (*Tokyo Imperial Univ.*) 1922, Tokyo, Japan
General Course.

Samarasinghe, Andrew Martin, L.R.C.P. and L.R.C.S. (*Univ. of Edinburgh*) 1922, L.M. (*Univ. of Dublin*) 1922, Haberaduwa, Ceylon
General Course.

Šimec, Amalia, M.D. (*Univ. of Prague*) 1920, Ljubljana, Jugoslavia
Child Hygiene.

Somaskander, Kulaverasingham, L.R.C.P. and S. (*Univ. of Edinburgh*) 1924, L.F.P. and S. (*Univ. of Glasgow*) 1925, Wellawatta, Ceylon
General Course.

Stanarević, Dobroslav, M.D. (*Univ. of Prague*) 1923, *Bacteriology.* Belgrade, Jugoslavia

Wickremesinghe, Walter Gerald, L.M.S. (*Ceylon Medical Coll.*) 1921, M.R.C.S. ((England) 1922, L.R.C.P. (London) 1922. Wellawatta, Ceylon
Child Hygiene.

Zolog, Michael, M.D. (*Univ. of Cluj*) 1920, Cluj, Rumania
General Course.

DEGREES

On February 24, 1925, the following Degree was conferred:

Doctor of Public Health

José Zozaya, S.B. (*St. Louis Univ.*) 1921, M.D. (*ibid.*) 1923.
Special Field, Tropical Medicine.
Thesis, "Studies on Immunization against Cholera and Plague."

On June 18, 1925, Degrees were conferred as follows:

Master of Public Health

William Howard Enneis, M.D. (*Univ. of Georgia*) 1921.

Howard Arthur Lanpher, M.D. (*Tufts Coll. Medical School*) 1907.

Percy Theodore Watson, A.B. (*Carleton Coll.*) 1903, M.D. (*Johns Hopkins Univ.*) 1907.

Doctor of Public Health

Shang Feng Chiang, M.D. (*St. John's Univ.*) 1923, M.P.H. (*Harvard Univ.*) 1924.
Special Field, Parasitology.
Thesis, "A Study of Parasitic Amoebae by Experimental Cross-Infection of Laboratory Animals."

Henry Byron Elkind, M.D. (*Tufts Coll. Medical School*) 1915.
Special Field, Mental Hygiene.
Thesis, "Researches in Mental Hygiene in Industry."

Edward Godfrey Huber, A.B. (*Univ. of Michigan*) 1903, M.D. (*ibid.*) 1905.
Special Field, Public Health Administration.
Thesis, "The Control of Communicable Diseases Prevalent in Massachusetts."

Jozef Makary Lubczynski, M.D. (*Krakow Univ.*) 1912.
Special Field, Child Hygiene.
Thesis, "Some Statistical Observations on the Weight of Babies Supervised by the Infant Welfare Stations in Boston during 1913–1922."

Alton Stackpole Pope, A.B. (*Bowdoin Coll.*) 1910, C.P.H. (*Harvard-Technology School of Public Health*) 1920, M.D. (*Tufts Coll. Medical School*) 1923.
Special Field, Epidemiology.
Thesis, "Studies on the Epidemiology of Scarlet Fever."

TABULAR VIEW

	October	November	December	January
A.M.	Principles of Sanitary Engineering A	Principles of Sanitary Engineering A	Vital Statistics A	Vital Statistics A
P.M. Monday, Wednesday and Friday	Medical Zoölogy and Tropical Medicine A 2–5	Medical Zoölogy and Tropical Medicine A 2–5	Nutrition A 1.30–2.30 Medical Zoölogy and Tropical Medicine A 2.30–5.30	Nutrition A 1.30–2.30 Medical Zoölogy and Tropical Medicine A 2.30–5.30
P.M. Tuesday and Thursday	Bio-Mathematics 2–3 Public Health Administration A 3–5	Immunology 2–3 Bio-Mathematics 3–4 Public Health Administration A 4–5.30	Immunology 2–3 Public Health Administration A 3–5	Immunology 2–3 Epidemiology A 3–5
	February	**March**	**April**	**May**
A.M.	Physiology A Ventilation and Illumination A Applied Immunology and Bacteriology A Hospital Administration A	Mental Hygiene A Applied Immunology and Bacteriology A	Child Hygiene A Industrial Medicine A	Field work in Public Health Administration and Epidemiology
P.M. Monday Wednesday and Friday	Physiology A Ventilation and Illumination A Communicable Diseases A Hospital Administration A	Mental Hygiene A Applied Immunology and Bacteriology A	Child Hygiene A Industrial Medicine A	Field work in Public Health Administration and Epidemiology
P.M. Tuesday and Thursday	Industrial Toxicology A 2–3 Epidemiology A 3–5	Industrial Toxicology A 2–3 Applied Immunology and Bacteriology A Epidemiology A 3–5	Child Hygiene B	Field work in Public Health Administration and Epidemiology

Advanced courses, special courses, and courses in research are not included in this list. *This tabular view is given for convenience and should not be regarded as representing approved courses in the sense that any combination of these courses necessarily represents a satisfactory program.* Most students, and all students who are candidates for higher degrees, may include in the program courses not listed here, and perhaps courses not formally listed in the catalogue.

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These publications include:—

The Annual Reports of the President and of the Treasurer.

The Annual University Catalogue.

The Annual Catalogues of the College and the several Professional Schools of the University; the Descriptive Pamphlet; the Announcements of the several Departments; etc., etc.